

FORT WORTH

WATER

Drinking Water Quality Report

Year 2002 Data

Know the Facts About Your Water

The Fort Worth Water Department employees are proud of the role they play in protecting public health. As you read this report, you will learn that the water delivered to your tap meets all state and federal water quality standards.

These standards are becoming stricter. This means treatment plants and distribution systems must be upgraded. For example, the Rolling Hills Water Treatment Plant now uses ozone to disinfect the water. New filters are in place at the North Holly Water Treatment Plant.

Please take the time to review this report. Help us protect and preserve this precious and finite resource.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk.

More information about contaminants and potential health effects is

available from the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov.

As water travels over the land or through the ground, it dissolves naturally occurring minerals and radioactive material. It also can pick up substances resulting from animal waste or human activity.

To ensure tap water is safe to drink, EPA and the Texas Commission on Environmental Quality prescribe regulations limiting the amount of certain contaminants in water provided by public systems.

The Food and Drug Administration (FDA) regulates limits for contaminants in bottled water that must provide the same protection for public health as tap water standards.

If you have any questions about this report, you can visit with Water Department representatives at 7 p.m. Thursday, June 12 at East Regional Library, 6301 Bridge St.

Fort Worth Water Department
Public Education Section
1000 Throckmorton St.
Fort Worth Texas 76102

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Notice to Special Populations

The Texas Commission on Environmental Quality requires the following statement be printed in all annual water quality reports.

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly or immunocompromised persons, such as those undergoing chemotherapy for cancer, those who have undergone organ transplants, those who are undergoing treatment with steroids and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections.

You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

What is in your drinking water?

Fort Worth's water is regularly tested for contaminants on the National Primary Drinking Water Standards list and other contaminants considered for possible regulation.

The following charts list the contaminants found in Fort Worth's drinking water in 2002. See page 3 for additional information on the abbreviations and terms used in the charts.

Substance	Range of Detections	Level Found	MCL	MCLG	Common Sources of Substance in Drinking Water
Microorganisms					
Total Coliforms (including fecal coliform and <i>E.coli</i>)	0 - 0.43	Presence in <1% of monthly samples	Presence in 5% of monthly samples	0	Coliforms are naturally present in the environment; as well as feces; fecal coliforms and <i>E.coli</i> only come from human and animal fecal waste
Turbidity (ntu) ¹	N/A	0.45*	TT	N/A	Soil runoff
		99%**	% of samples < 0.3 NTU		
¹ Turbidity: *Must be less than 0.3 ntu in 95% of monthly samples. The 0.45 was the highest single reading at any of the city's four water treatment plants. **Lowest monthly percentage of samples less than 0.3 NTU.					
Organic Chemicals					
Atrazine (ppb)	0 - 0.27	0.20	3	3	Runoff from herbicide used on row crops
Inorganic Chemicals					
Barium (ppm)	0.033 - 0.058	0.058	2	2	Discharge from metal refineries; erosion of natural deposits; discharge of drilling wastes
Fluoride (ppm)	0.1 - 1.3	0.85	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (ppm) (measured as nitrogen)	0.15 - 0.41	0.41	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage
Radionuclides					
Beta Particles & Photon emitters (pCi/L)	4.4 - 5.6	5.6	50	None	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Radium 228 (pCi/L)	0 - 1	1	5	None	Erosion of natural deposits
Disinfection By-Products					
Bromate (ppb)	0 - 10	3	10	0	By-product of drinking water disinfection
Haloacetic Acids (HAA5) (ppb)	0 - 27	27	60	0	By-product of drinking water disinfection
Dichloroacetic Acid (ppb)	3 - 15	15	Not Regulated	0	Though these items are not regulated individually, they are included in the Haloacetic Acids (HAA5).
Trichloroacetic Acid (ppb)	0 - 8	8	Not Regulated	300	
Total Trihalomethanes (ppb)	5-52	46	80	0	By-product of drinking water disinfection
Bromoform (ppb)	0 - 2	0.9	Not Regulated	0	Though these items are not regulated individually, they are included in the Total Trihalomethanes.
Bromodichloromethane(ppb)	0 - 19	17	Not Regulated	0	
Chloroform (ppb)	0 - 26	18	Not Regulated	0	
Dibromochloromethane (ppb)	0 - 12	10	Not Regulated	60	
Chloral Hydrate (ppb)	0 - 2	0.5	Not Regulated	0	By-product of drinking water disinfection
Disinfectants					
Substance	Range of Detections	Level Found	MRDL	MRDLG	Common Sources of Substance in Drinking Water
Chloramines (ppm)	0.7 - 4.0	2.9	4	4	Water additive used to control microbes

Lead & Copper					
Substance	90th Percentile Values ³	# of Sites Exceeding Action Level	MCL	MCLG	Common Sources of Substance in Drinking Water
Lead ¹ (ppb)	3.9	1	Action Level = 15	0	Corrosion of household plumbing systems; erosion of natural deposits
Copper ¹ (ppm)	0.395	0	Action Level = 1.3	1.3	

¹ 90th percentile value: 90% of the samples were at or below this value. EPA considers the 90th percentile value the same as an "average" value for other contaminants. Lead & copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water. If 10% of tap water samples exceed the action level, water systems must take additional steps.

Abbreviations Used in the Charts

Action Level - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

MCL - Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology and taking costs into consideration. MCLs are enforceable standards.

MCLG - Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are nonenforceable public health goals.

MRDL - Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG - Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA - Not Applicable.

ntu - Nephelometric Turbidity Units are used to measure water turbidity or clarity.

pCi/L - Picocuries per liter is a measure of radioactivity in water. A picocurie is 10⁻¹² curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

ppb - Parts per billion; equivalent to micrograms per liter

ppm - Parts per million; equivalent to milligrams per liter

Secondary Maximum Contaminant Level (SMCL) - Nonenforceable guidelines regulating contaminants that may cause cosmetic effects or aesthetic effects in drinking water. These contaminants are not considered to present a risk to human health at the SMCL.

TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water.

Turbidity - At no time can turbidity (cloudiness of water) go above 1 nephelometric turbidity units (ntu); systems that filter must ensure that the turbidity go no higher than 1 ntu (0.3 ntu for conventional or direct filtration) in at least 95% of the daily samples in any month. A measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Cryptosporidium, Giardia & Viruses

Fort Worth's 2002 testing of lake water detected low levels of *Cryptosporidium*, *Giardia lamblia* and viruses. Required levels of inactivation are achieved through disinfection and filtration.

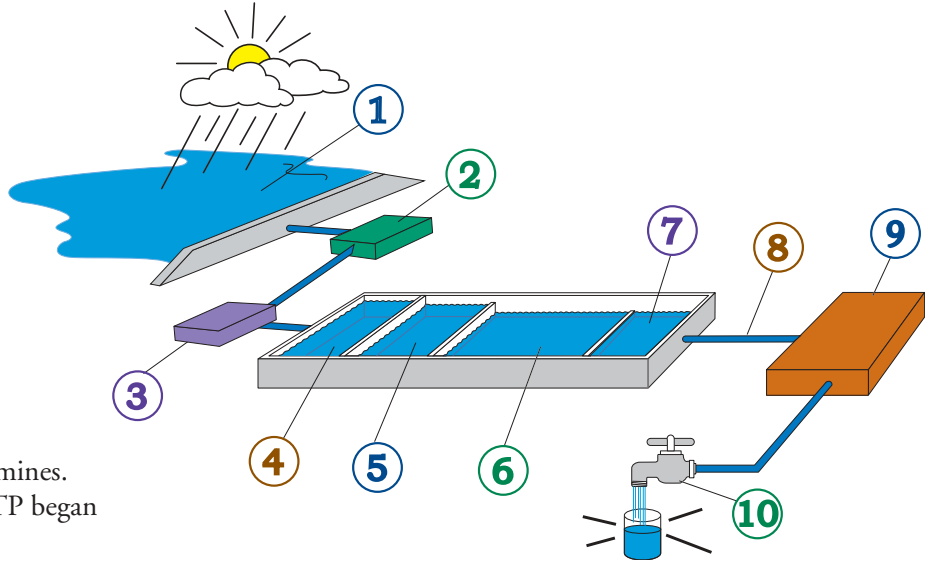
These are microscopic organisms common in surface water. The source is human and animal fecal waste. When ingested, *Cryptosporidium* and *Giardia lamblia* can cause diarrhea, cramps and fever.

No specific drug therapy has proven effective, but people with healthy immune systems usually recover within two weeks. Individuals with weak immune systems, however, may be unable to clear the parasite and suffer chronic and debilitating illness.

Other Contaminants		
Contaminant	Range	SMCL
Chloride (ppm)	11 - 37	250
pH (units)	7.6 - 8.7	6.5-8.5
Sulfate (ppm)	37 - 54	250
Total Dissolved Solids (ppm)	122 - 209	500
Calcium (ppm)	40 - 53	NA
Bicarbonate (ppm)	113 - 153	NA
Conductivity (µmhos/cm)	360 - 487	NA
Magnesium (ppm)	3 - 10	NA
Sodium (ppm)	11 - 27	NA
Total Hardness (ppm)	127 - 150	NA
Total Hardness (grains/gallon)	7 - 9	NA
Total Alkalinity (ppm)	93 - 125	NA

The Water Treatment Process

1. Reservoirs: Fort Worth water comes from six lakes.
2. Raw water pump station: Here water is pumped from the lake to the water treatment plant.
3. Disinfection: Either ozone or chloramines (chlorine and ammonia) is added to kill bacteria and viruses. The Eagle Mountain and Rolling Hills water treatment plants use ozone for primary disinfection. North Holly and South Holly water treatment plants presently use chloramines. (Full-time use of ozone at Rolling Hills WTP began in January 2003.)



4. Mixing Chamber: Chemicals, called coagulants and polymers are added to the water to cause small particles to adhere to each other.
5. Coagulation Basin: The particulate matter begins to clump together.
6. Sedimentation Basin: Particles settle to the bottom of the basin and are removed.
7. Filters: Water is filtered through four feet of coal, sand and gravel.
8. Disinfection: Chloramines (chlorine and ammonia) are added to provide residual disinfection all the way to the customer's tap. The chlorine kills bacteria and viruses. Ammonia is added to reduce the chlorine odor and the amount of chlorine by-products created.
9. Clearwell storage: Water is temporarily stored in tanks before it is pumped to the public.
10. Distribution: Drinking water reaches the public through more than 2,400 miles of pipeline.

How to Contact the Water Department

817-FW-24-HRS
(817-392-4477)

- Billing questions
- Service interruptions
- Main breaks
- Sewer problems
- Water quality Information
- Automated Account Information

The Water Department is part of Fort Worth city government. The City Council meets each Tuesday at City Hall. Times vary. Call 817-871-8888 or check the web site to verify meeting times. (www.fortworthgov.org)

www.FortWorthgov.org/water

WPE@fortworthgov.org

Customer Service Locations

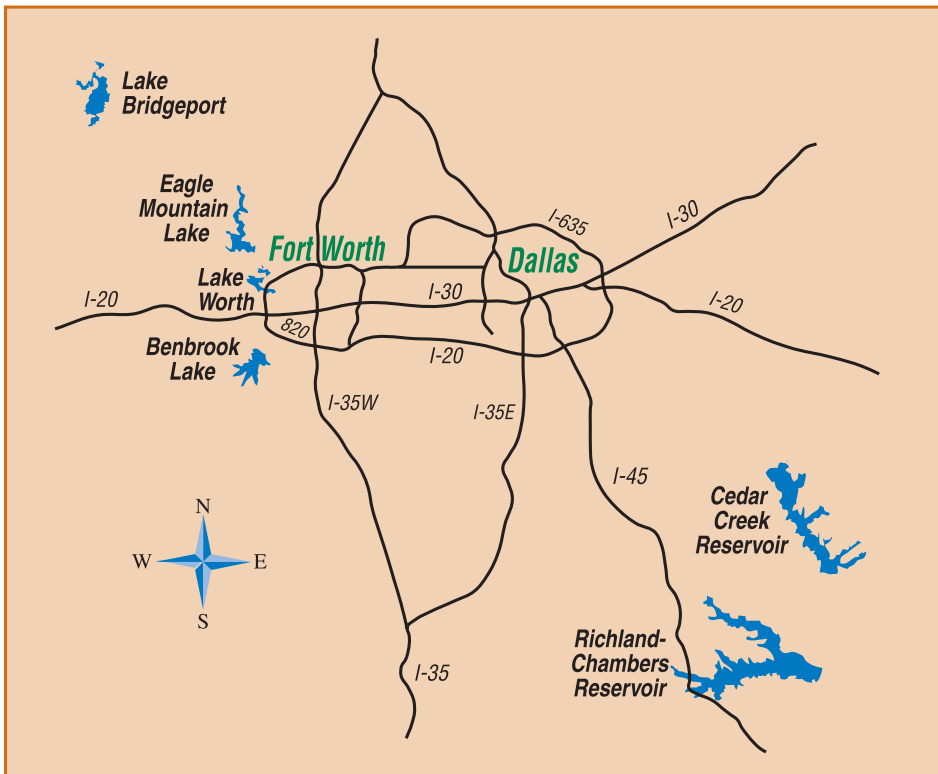
Downtown
908 Monroe St.
Fort Worth, Texas 76102
Monday - Friday
7:30 a.m. to 5:30 p.m.

Southeast Office
4245 E. Berry St. at Miller Street
(inside Minyard's Food Store)
M-F 9 a.m. to 8 p.m.
Saturday 8 a.m. to 7 p.m.
Sunday Noon to 5 p.m.

Northside Office
102 NW 28th St. at Main Street
(inside Carnival Food Store)
M-F 9 a.m. to 8 p.m.
Saturday 8 a.m. to 7 p.m.
Sunday Noon to 5 p.m.

Administrative Office

Fort Worth City Hall
2nd Floor
1000 Throckmorton St.
Monday - Friday
8 a.m. to 5 p.m.



Improvements Made at Treatment Plant

In January 2003, the Rolling Hills plant became the second in Fort Worth to use ozone for primary disinfection.

Ozone is effective against some microorganisms that are resistant to chlorine. Also, ozone reduces the amount of disinfection by-products formed when organic matter reacts with chlorine. Another benefit to consumers is that ozone substantially reduces taste and odor problems.

Fort Worth plans to add ozone to the two Holly water treatment plants over the next five years.

Where do we get our water?

Fort Worth uses surface water from six lakes — Lake Bridgeport, Eagle Mountain Lake, Lake Worth, Benbrook Lake, Cedar Creek Reservoir and Richland-Chambers Reservoir.

The City of Fort Worth owns Lake Worth. The U.S. Army Corps

of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District (TRWD).

Fort Worth monitors water quality in Lake Worth and participates with TRWD to ensure the other lakes are regularly tested.

If my water tastes or smells different does that mean it's not safe to drink?

Contaminants may be found in drinking water that may cause taste, color or odor problems. These types of problems are not necessarily causes for health concerns.

Taste and odor problems may originate in any lake for a number of reasons, such as algae growth, a change in temperature, excessive rainfall, flooding, drought or dry weather conditions.

Water that has been stored in a pipe for a long time, especially during warm weather, also may develop an odor. That is why you may notice a change in your water after returning from vacation.

What should I do if I think there's something wrong with my water?

Call 817-FW-24-HRS (817-392-4477). Your complaint will be taken and forwarded to our laboratory, which will collect a sample from the outside tap nearest your water meter. Water Department representatives do not need to enter your home to take the sample.

Source Water Assessments

Over the next several years, Texas Commission on Environmental Quality will assess our water supply lakes and all Texas water bodies.

The assessment for Lake Worth is complete. A copy is available for viewing at the Water Department's office in City Hall, 1000 Throckmorton Street.

Though the assessment for Richland-Chambers Reservoir has not been completed, we know the herbicide atrazine is a concern for this lake.

Atrazine is used to kill weeds

without harming crops. It enters the lake through runoff. Tarrant Regional Water District works with farmers to minimize atrazine's impact on the water supply.

Fort Worth monitors the raw water for atrazine and adds powdered activated carbon (PAC) to the treatment process when atrazine is detected at one part per billion. The maximum amount of atrazine allowed in drinking water is three parts per billion.

PAC has shown effectiveness in lowering atrazine levels.

New Water Rates Encourage Residents to be Water Smart

Fort Worth is asking citizens to use water efficiently and is providing a financial incentive to do so.

Residents who use more water will pay more for it under the rate structure that took effect Jan. 1. Residents who use over 1,000 cubic feet (7,481 gallons) of water in one month will see the rate increase 20 cents per 100 cubic feet.

Use more than 3,000 cubic feet (22,443 gallons) in a month and the rate jumps another 32 cents per 100 cubic feet.

The base volume rate is \$1.58 per 100 cubic feet. The second tier rate is \$1.78 per cubic feet, and the third tier is \$2.10 per cubic feet.

Last year's average residential water use was 1,220 cubic feet (9,127 gallons) per month. The bill for a resident with average water use will increase 68 cents monthly.

About 30 percent of Fort Worth's customers use less than 1,000 cubic feet every month.

The new rate for irrigation meters is \$1.84 per 100 cubic feet, up from \$1.70.

For information about water rates call 817-FW-24-HRS (817-392-4477) or visit the Web site www.forthworthgov.org/water. Organizations can schedule a speaker by calling 817-871-6565.

The Water Department is examining its own practices and seeking ways to reduce water lost through leaks.

As a pilot program, the department purchased 50 leak detection devices. These devices are placed in tandem and transmit signals between each other. The devices detect leaks in a segment of pipe using sound waves.

A crew can then be assigned to make the repair. This equipment allows leaks to be found when water is not visible on the surface.

In Fiscal Year 2002, the devices detected 53 leaks. It is estimated

these leaks would have resulted in 220.6 million gallons of water loss over a one year period.

Based on the pilot program's success, another 150 leak detection devices were recently purchased.

Learn more about water by visiting the following Web sites.

U.S. Environmental Protection Agency
www.epa.gov

*Texas Commission
on Environmental Quality*
www.tceq.state.tx.us

Texas Water Development Board
www.twdb.state.tx.us

American Water Works Association
www.awwa.org

Water Environment Federation
www.wef.org

Tips for Using Water Efficiently Outdoors

- ★ Water only when the grass needs watering. Walk across your grass early in the morning. If your footprints remain, it needs water.
- ★ Water deeply. This promotes deep roots and healthy grass. An inch of water will penetrate the soil four to six inches.
- ★ Choose plants native or adapted to this region and soil conditions.
- ★ For clay soils, turn off the sprinkler when runoff occurs. Wait 20 minutes for water to absorb into the ground. Dig a test hole to see how deeply it absorbed. Repeat steps until the water penetrates six inches.
- ★ Water early in the morning. Watering in the middle of the day loses a lot of water to evaporation.
- ★ Mulch all plant beds two to three times a year with organic matter. This slows evaporation.
- ★ Never water on windy days.
- ★ Water newly planted flowers and shrubs separately and more often so their root systems can get established.